

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Naotaka AKIWA

Application No.: New U.S. Patent Application

Filed: December 14, 2001

Docket No.: 111477

For: STEPPING MOTOR, STEPPING MOTOR DEVICE AND DRIVING METHOD  
THEREOF

*#3  
Preliminary  
Amendment  
7-10-02*

PRELIMINARY AMENDMENT

Director of the U.S. Patent and Trademark Office  
Washington, D. C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please replace claims 4-7 as follows:

4. (Amended) A stepping motor according to any one of claim 1, wherein the arc-shaped deformation preventing groove is provided along the circumference at the side end contacting the base to which the stepping motor is mounted.

5. (Amended) A stepping motor according to any one of claim 1, wherein the rotor is provided opposing the stator magnetic poles on a rotor yoke secured to the rotating shaft and a notch is provided in the rotor yoke in order to leak magnetism of the rotor,  
further comprising a leakage flux detector for detecting leaking magnetic flux from the rotor, the leakage flux detector provided in a position opposing the notch.

6. (Amended) A stepping motor according to any one of claim 1, further comprising a leakage flux detector for detecting changes in magnetic poles, the leakage flux detector provided on a cylinder end surface of a cylindrical permanent magnet provided in a cylindrical shape opposing the stator magnetic poles on the rotor yoke secured to the rotating